# CHAPTER 6

# SCREENING



**Study Documents Referred in this Chapter**

- Telephone Screening Interview
- Informed Consent
- Short Physical Performance Battery (SPPB)
- CHAMPS Questionnaire
- Blood Pressure, Radial Pulse and Weight
- 400 m Walk
- Modified Mini Mental Status Exam (3MSE)
- ECG
- Physical Exam
- Study Eligibility Review Checklist Medication Inventory
- Medical, Hospital Admission History
- Hopkins Verbal Learning Test (HVLT)
- Digit Symbol Substitution Test
- Modified Rey-Osterrieth Complex Figure (Rey-0)
- Proxy Functional Activities Questionnaire (PFAQ)

# CHAPTER 6

# SCREENING

## 6.1. Overview

This chapter describes the screening activities for LIFE and the collection of screening measures. Details are provided on how to operationalize the screening measures. A more complete description of the eligibility and exclusion criteria is provided in Chapter 3. There are five primary components to the screening process: the phone screen, the Short Physical Performance Battery (SPPB), the 18 screening items of the CHAMPS questionnaire, the 400 meter walk test, and health screen. These components are typically administered over 3 contacts, a phone-interview and two screening visits (SV1 & SV2). The flow of the participant through the screening process is outlined on the LIFE Study Eligibility Review Checklist. This study tool outlines the screening steps and helps the clinics track the progress of the participant through the screening process.

## 6.2. Pre-Screening

It is uncertain how many potential participants will be screened for each field center to recruit their target of 200 enrolled participants. The LIFE-P study indicated that 7.4 participants had to be screened for each person randomized. The LIFE study will exclude another 20% of the more physically active participants leading to a predicted need to screen 9.3 participants for every randomized participant. The tracking of recruitment begins with potential participants at the time of the telephone screen. Prior to this stage, contacts and yields from different sources are only captured locally. In order that this local experience is recorded, field centers should maintain logs specifying:

- Number of contacts by recruitment source
- Percent of contacts providing consent for the phone interview
- Primary reasons for refusing phone interview by recruitment source

## 6.3. Overview Of Screening Steps

The screening process is organized into five steps. Different components of eligibility are established at each step of the process. The order that the steps are accomplished is important. There is flexibility, however, in how the steps are implemented. For example, the telephone screening questionnaire can be administered either over the phone or by face-to-face interview, and the SPPB can be done either on- or off-site according to the needs of the site.

The steps of the screening process are:

- Telephone Screen
- Short Physical Performance Battery
- Physical Activity Review (CHAMPS)
- Health Review by a mid-level health professional or study physician and clearance for study participation by a study physician
- 400 meter walk

### 6.3.1. The Telephone Screen

Before participants are invited to attend the clinic for a screening visit, a number of eligibility items are to be checked on the phone. This phone interview is an inexpensive method to identify potential LIFE participants who have a high probability of being found ineligible at the screening visit. The key elements to remember for the phone screen:

- Verbal consent must be obtained before administering the phone screen. If it is determined that a potential participant is not eligible before the verbal consent is obtained, it is not necessary to administer the telephone screening interview. For example, if a subject contacts the clinic and indicates that he/she is 68 years of age and is in involved in a structured physical activity program prior to giving verbal consent for telephone screening interview, it is not necessary to administer the telephone screening interview.
- The participant ID is assigned once verbal consent is obtained.

Once it is established that the participant is in the proper study age-range and lives in the clinic's targeted recruitment area, the first four pages of the phone screen should be administered. It is not necessary to continue the phone screen for participants who are either geographically or age ineligible. In addition, it is not necessary to continue the phone screen for participants who screen out based on any other permanent exclusion criteria. In order to successfully data enter the form, the interviewer should complete Items 1 and 2, and the Item on the form that indicates an exclusion criterion for the participant. All other Items on the form should be entered as "Permanently Missing" data and at least the first eligibility question must be answered (Q 16).

- Each clinic should establish a process to track potential participants with temporary exclusions, to make sure these participants are recontacted at the appropriate time.
- In some cases screenees may be unclear about certain aspects of their medical history. These participants may proceed to SV1 where the site physician can interview the participant to establish final eligibility.
- Participants with a recent history of breast, cervical, colon, prostate, rectal, uterine, thyroid, or oral cancer should be asked about the treatment status of these tumors at the first screening visit to determine whether treatments could interfere with participation in the study.
- If the participant is found to be eligible on the phone screen, this should be noted on the Study Eligibility Review Checklist.

### 6.3.2. Short Physical Performance Battery

The SPPB is used to identify participants who are at high risk of experiencing mobility disability in the subsequent year. Only participants who score less than 10 on this test are eligible for the study. To ensure the recruitment of an adequate number of frail participants, the recruitment target is to recruit 55% of participants who score >7 and 45% of participants who score $\leq$ 7 (no exclusion is considered for minority participants). Because this test might be done off-site, and because it will exclude a large number of potential participants, informed

consent for this test can be obtained separately from the main study consent. This will save time by allowing the clinics not to administer a lengthy consent to a large number of ineligible participants. The test is described more completely in Chapter 16.

When doing the SPPB Screening off-site:

- For the walk portion of the test use the 4-meter course.
- Be sure there is room for the participant to both start the test and room past the 4-meter mark to complete the test.
- The test should be done out of the sight of other potential participants.

The key elements of the SPPB administration are:

- Obtain consent for the SPPB.
- Those scoring less than 10 may be eligible for the study.
- If the participant is found to be eligible on SPPB, this should be noted on the Study Eligibility Review Checklist form.

### 6.3.3. Physical Activity Review

The LIFE study intervention target is to have participants in the physical activity group perform 150 minutes of at least moderate physical activity per week. Including participants who are already active to this extent will reduce the ability to see intervention group differences in this study. The LIFE study will use the CHAMPS questionnaire (described in detail in Chapter 25) to identify and exclude participants already too active to benefit from the study intervention.

The CHAMPS questionnaire should be administered after the SPPB but before evaluating eligibility criteria. The CHAMPS may be administered either off-site or as part of the SV1 screening visit.

While the entire CHAMPS questionnaire is to be administered, study eligibility will be determined by the responses to the 18 items that represent moderate or heavy physical activity. Computerized scoring is available upon entry of the form into the LIFE database. In the event that the CHAMPS is administered at a site in which a computer is not accessible, forms are also provided that allow the administrator to calculate items and determine CHAMPS eligibility through paper/pencil. Participants who report $\geq$ 125 min/week of physical activity across these items are not eligible for the LIFE Study.

Once completed, update the Study Eligibility Review Checklist to reflect the status of the participant.

### 6.3.4. Health Review

The Health Review is conducted to assess whether participation in the study is safe for the participant, and to assess whether the participant has any physical, cognitive or psychological problems that might cause him/her to be unable to fully participate in the study. It is the site physician's responsibility to review all of the

assembled evidence from all of the health related assessments to proceed to randomization. Participants should be excluded by the study physician if the health data collected indicate that:

- The study interventions are unsafe for the participant,
- There are conditions of such severity that full participation in the trial is unlikely, or
- There is evidence of cognitive or psychological problems that would interfere with the delivery of the study interventions.

The Health Review Portion consists of:

- Telephone Screening Interview
- Blood Pressure, Radial Pulse, Weight, and Waist Circumference
- 3MSE
- Medication Inventory
- Medical and Hospital Admission History
- ECG
- Physical Exam

The list above presents the elements of the Health Review in a preferred order. These can be shifted to accommodate clinic flow. In cases where there are no potential alert values on any of the forms required for the Health Review and no unexpected or unusual symptoms or conditions, a mid-level health professional may approve performance of the 400 M walk. In all other cases, the study physician must review and approve the participant for performance of the 400 M walk. However, prior to randomization of a potential participant, all medical information must be reviewed by a study physician, who is ultimately responsible for determining study eligibility and approving randomization. It is desirable that the physical exam be done last when all of the other data are available for the examiner, should any follow-up be required. The instructions for conducting these assessments are provided elsewhere in the MOP.

The blood pressure criteria are discussed above. A Modified Mini Mental Status Exam score less than the determined cut points is an exclusion. There are no specific exclusions related to the medication review and the medical and hospital admission history, however, this information will be useful to the study physician in determining the final eligibility of the participant. For example, the presence of severe psychiatric problems such as schizophrenia and bipolar are study exclusions. The presence of such conditions may be indicated by an affirmative response to the medical history form question 26: “Since the age of 50, have you seen a doctor for emotional, nervous, or psychiatric problems?” Responses that require physician review on the Medical and Hospital Admission History form are marked with an asterisk.

A physician-read ECG showing a serious conduction disorder (e.g., 3$^{rd}$ degree heart block), uncontrolled arrhythmia, new Q waves or ST-segment depression are potential exclusions from the study. The study physician will determine if

these conditions are permanent or temporary exclusions. If they are temporarily excluded, participants can be seen again for further evaluation without re-screening as long as no more than 45 days elapse between the date of the full study consent and randomization.

The physical exam is described in Chapter 16 of the MOP. The physical exam can be conducted by either a physician, advanced nurse practitioner or a physician assistant. The study physician should see prospective participants to verify eligibility if there are any questions raised during the health screening process. Specifically, the physician should see participants who: respond "Don't Know" to items on either the telephone screening interview or the baseline health history, give an affirmative history to cancer in the past three years to verify that the tumor is currently in remission; respond that they have seen a doctor for emotional or psychiatric problems since age 50; give concerning answers on the Medical and Hospital Admission History form (responses marked with an asterisk); or have abnormal findings on the physical exam. In these cases, the study physician should record the date on which the participant is seen on the last page of the physical exam form. The physical exam can occur during the first screening visit or at the beginning of the second screening visit. The Study Eligibility Review Checklist is provided as a tool for completing the health review.

If participants have conditions that would not be so severe as to be exclusionary if addressed, they can be excluded temporarily.

A participant may be deemed to be ineligible after the completion of the first screening visit but before the second scheduled visit. If this happens, the participant should be called and the reason(s) for exclusion should be explained.

The study physician should carefully review the Study Eligibility Review Checklist to confirm that the participant has no medical exclusions prior to randomization. Medical clearance for the study is indicated on the Physical Exam form.

Following the Health Review:

- Document the health review on the Study Eligibility Review Checklist.

### 6.3.5. 400 m Walk

Walking disability is the primary end-point for the LIFE study. Therefore, it is essential to establish that participants are able to walk 400 meters at the outset of the study. To be eligible participants must be able to walk 400 meters in 15 minutes or less without sitting down or stopping for more than 60 seconds, without the help of another person, the use of a walker, and without developing chest pain or substantial shortness of breath. The test is described in detail in Chapter 16. The 400 meter walk test and all subsequent screening tests must be done at the Field Center assessment clinic.

Prior to initiating the 400 m walk test:

- Obtain consent to participate in the main study.
- Collect vital signs (blood pressure, pulse, height and weight).
- Do not perform the test if the participant has a systolic blood pressure > 200 mmHg and/or diastolic blood pressure > 110 mmHg, as this is a temporary exclusion from the study.
- Obtain approval from a mid-level health professional or the study physician
- Administer the Disability Questionnaire, MAT-sf, and accelerometry.

If the participant has a systolic blood pressure > 200 mmHg and/or diastolic blood pressure > 110 mmHg, this person should not be tested. Elevated blood pressure is a temporary exclusion and this participant should be referred to his/her healthcare provider to either initiate or change blood pressure medication.

Participants are excluded from the LIFE Study if they have obvious symptoms of exercise intolerance during the 400 m walk test including: chest pain, dizziness or substantial shortness of breath. The site physician should be consulted if there are questions about whether the symptoms are consistent with exercise intolerance.
Following the successful completion of the 400 meter walk test:

- Have the participant complete the Efficacy for Walking Process Measure (self administered).
- Update the Study Eligibility Review Checklist.

### 6.4. Randomization

Randomization occurs at the end of the second screening visit. The randomization process is described in Chapter 7. After completing all SV1 eligibility assessments and any remaining assessments at the beginning of SV2, the Study Eligibility Review Checklist should be carefully completed and reviewed prior to randomization. It should be clear from this study tool that the participant is eligible for the study. Once all forms for SV1 and SV2 have been data entered in the LIFE database, the data system can provide a group assignment for the participant. Any questions that arise should be discussed with the study physician and the field center PI prior to randomization. Randomization must occur within 28 days (or 45 days in the event of objective impediments) of obtaining the main informed consent. If a participant falls out of this window, he/she must repeat screening visit 1 assessments.

### 6.5. Suggested Schedule

Most of the elements of the screening and baseline assessment process are to be done according to protocol. The orders of assessments are listed below. The items with an asterisk must be done in a group and in the order listed either at Screening Visit 1 or Screening Visit 2.

1. Telephone Screen
2. Screening Visit 1
    - SPPB/CHAMPS Consent

- SPPB and CHAMPS
- Main Study Consent
- Contact Information (Questionnaires can be administered if there are waits for other components)
- Demographic Questionnaire (Questionnaires can be administered if there are waits for other components)
- Blood Pressure, Radial Pulse, Weight and Waist Circumference (Weight and Waist Circumference may be obtained any time during SV1)
- Medical and Hospital Admission History
- Medication Inventory
- ECG
- HVLT
- 3MSE
- DSST
- Rey-O
- HVLT Delayed Recall
- Physical Exam
- *Disability Questionnaire and MAT-sf (Must be done prior to the 400 m walk)
- *Accelerometry (Must be done prior to the 400 m walk)
- *400 m Walk (This may be done at the beginning of SV2 if needed to obtain physician review for medical safety)
- *Borg Index for Dyspnea (should be done immediately after the 400 m walk, prior to obtaining heart rate)
- *Efficacy for Walking (Should be done immediately after the 400 m walk/Borg Index)
- Height (May be done at any time during SV1)
- Participants should get the Quality of Well-Being Scale, Health Care Utilization Questionnaires, the Pre-randomization Expectation Contract, and accelerometer to take home.

4. Screening Visit 2 – This should be a Fasting Visit (a minimum of 9 Hours)
   - Phlebotomy and urine collection and processing
   - Participant snack for fasting participants
   - *Disability Questionnaire and MAT-sf (Must be done prior to the 400 m walk )
   - *Accelerometry (Must be done prior to the 400 m walk)
   - *400 m walk test
   - *Borg Index for Dyspnea (if not done in SV1)
   - *Efficacy for Walking (if not done in SV1)
   - E-Prime Checklist (only if not excluded for 3MSE < established cut points)
   - Review of Study Eligibility Review Checklist
   - Other Process Measures

- Review of Quality of Well-Being Scale and Health Care Utilization Questionnaires
- Ankle Brachial Index (at least 30 minutes should pass between the 400 m walk and ABI, if the 400 m walk test is performed at SV2)
- Claudication
- Napping, Caffeine Energy Drink Inventory
- Epworth Sleepiness Scale Questionnaire
- Insomnia Severity Index
- Pittsburgh Sleep Quality Index
- Berlin Questionnaire
- ATS-DLD Baseline
- Spirometry
- Grip Strength
- Health Related Quality of Life Questionnaire
- Review of Pre-randomization Expectation Contract
- Randomization
- NEWS-A
- PFAQ

## 6.6. Allowable Time Intervals for Screening

To ensure that participants are eligible to be randomized into the study, baseline data from screening visits must be collected within an appropriate timeframe prior to randomization. There are three allowable time intervals:

1. Date of Telephone Screening Interview to randomization – 60 days
2. SPPB and CHAMPS (prescreen) to randomization– 45 days.
   If a participant falls outside of this window, the prescreening measures must be repeated.
3. Date of main informed consent to randomization – 28 days (or 45 days in the event of objective impediments such as obtaining medical records). Every effort should be made by field centers to maintain the 28 day window; however, if there are objective impediments, the 45-day interval may apply. Prior to randomization, the clinic must confirm that the participant has not experienced significant medical changes or serious adverse events.

   If a participant falls outside of the 45-day window, the baseline visits must be repeated.

## 6.7. Components That Can Be Re-Screened (Temporary Exclusions)

There are several exclusion criteria that may change over time for which a participant can be re-screened at a later date. If, upon re-screening, the participant now meets the eligibility criteria, he/she may go on and be randomized. These are described in the Chapter 3.

For each of these re-screening attempts, if the re-screening still allows for the appropriate windows (see Section 6.6) the only item that needs to be re-screened is the item in question. Consequently, the screening forms do not need to be repeated; only the item in question should be repeated and recorded on the appropriate screening form. Draw a line through the original value, record the new value above it then initial and date the corrections. The corrected data should then be data entered. The same ID number should be used if the participant is re-screened. Otherwise, the screening process must be repeated. However, the same ID number should still be used.

Temporary exclusions (and other interruptions or variations from the screening schedule) may result in data on forms being collected on different days. If this occurs, the date of the visit listed on the form header should reflect the earliest date when data elements on the form were recorded. This will allow limits for the window when data may be collected prior to randomization to be enforced.

## 6.8 Components that Can Be Rescreened (Permanent Exclusions)

There are a couple of exclusion criteria that may change over time for which a participant can be re-screened at a later date. Due to the nature of the participants that will be recruited for the LIFE study, it is plausible that a participant who screen failed based on the SPPB or CHAMPS questionnaire may become eligible at a later date. Participants may be rescreened after a minimum of 9 months, from the date of the original screen fail. It is a recommendation for field centers to focus rescreening efforts on participants with an SPPB score of 10 and/ or a CHAMPS score slightly above the cut point (≥125) for level of physical activity that leads to exclusion from the LIFE study.